

SURFACING ALLOYS
TECH 1-K SELECTOR CHART

COLMONOY®
(nickel-based)



WALLCOLMONOY
SURFACING ALLOYS

ALLOY	NOMINAL COMPOSITION (%)									ROCKWELL HARDNESS (C-scale)	FUSING TEMPERATURE (Approx.)	SUPPLIED AS	METHOD OF APPLICATION	DESCRIPTION AND GENERAL USES
	C	Cr	B	Si	Fe	Ni	Mo	W	Others					
56	0.9	18.0	1.9	5.3	5.3	Bal	-	-	-	53-58	1,030°C	Atomised Powder	PTA* / Laser Cladding*	Better ductility and impact resistance than Colmonoy® 6. Finished with carbide tools and grinding. Used for valve seats, ball valves, extruder screws and marine engine valves.
88	0.8	17.0	3.0	4.0	4.0	Bal	-	17.0	-	59-64	1,100°C	Atomised Powder	Fusewelder™ / Spraywelder™ / HVOF** / PTA* / Laser Cladding*	Unique alloy containing chromium and tungsten borides and carbides for maximum abrasion and corrosion resistance. For high-temperature, highly abrasive applications, glass mould plungers, pump plungers and sleeves, valve seats, plastics extrusion screws. Finished by grinding or CBN tools.
84	1.1	29.0	1.4	2.3	1.0	Bal	-	7.5	-	40-45	1,095°C	Atomised Powder	PTA* / Laser Cladding*	Alternative to cobalt surfacing alloys, for service temperatures up to 800°C. Boron and silicon content provide better weldability at lower application temperatures.
69	0.7	14.0	3.2	4.5	4.0	Bal	2.2	-	Cu: 2.0	57-63	1,030°C	Atomised Powder	Spraywelder™ / HVOF** / PTA* / Laser Cladding*	Additions of chromium and molybdenum for better corrosion resistance. Wide plastic range makes overlays easier to fuse without sagging. For marine and petro-chemical applications. Finished by grinding.
62/63	0.7	16.0	3.0	4.5	4.5	Bal	-	-	-	55-63	1,025°C	Atomised Powder	Fusewelder™ / Spraywelder™ / HVOF** / PTA* / Laser Cladding*	Hard nickel-chromium-boron alloy containing chromium carbides. Excellent abrasion and corrosion resistance. Recommended for hardfacing parts to resist wear, corrosion, heat and galling. Typical applications: shafts, sleeves, pump plungers, sucker rod couplings, bed knives, camshafts, bushings, mill guides, mixer blades, seal rings, brick manufacturing equipment, and conveyor screws. Finished by carbide tools and grinding.
52/53	0.5	12.0	2.3	3.3	4.5	Bal	-	-	-	45-53	1,045°C	Atomised Powder	Fusewelder™ / Spraywelder™ / HVOF** / PTA* / Laser Cladding*	Similar to Colmonoy® 62 but has increased ductility with slightly lower abrasion resistance and similar corrosion resistance. Finished by grinding.
42/43	0.5	10.0	1.9	3.3	2.3	Bal	-	-	-	35-43	1,050°C	Atomised Powder	Fusewelder™ / Spraywelder™ / HVOF** / PTA* / Laser Cladding*	Better ductility and toughness than Colmonoy® 52. Less hardness and slightly less abrasion and corrosion resistance. Finished by carbide tools and grinding.
39	0.3	7.5	1.5	3.8	1.0	Bal	-	-	-	35-40	1,060°C	Atomised Powder	Fusewelder™	Marginally softer than Colmonoy® 43. Designed for general hard facing including glass container equipment repair and manufacture, plastic blow moulding tools and dies.

*See WCL TECH-PTA / LASER Selector Chart

**See WCL TECH-HVOF Selector Chart

SURFACING ALLOYS
TECH 1-K SELECTOR CHART

COLMONOY®
(nickel-based)



WALLCOLMONOY
SURFACING ALLOYS

ALLOY	NOMINAL COMPOSITION (%)									ROCKWELL HARDNESS (C-scale)	FUSING TEMPERATURE (Approx.)	SUPPLIED AS	METHOD OF APPLICATION	DESCRIPTION AND GENERAL USES
	C	Cr	B	Si	Fe	Ni	Mo	W	Others					
237	0.15	4.0	1.2	2.8	-	Bal	3.0	-	P: 2.1	36-40	930°C	Atomised Powder	Fusewelder™ / Spraywelder™ / HVOF** / PTA* / Laser Cladding*	Specially designed for glass container industry for repair and/or protection of castings or mould. Chemical composition provides varying fluidity during application and hardness.
234	0.15	4.0	1.0	2.8	-	Bal	3.0	-	P: 2.1	32-36	960°C	Atomised Powder	Fusewelder™ / Spraywelder™ / HVOF** / PTA* / Laser Cladding*	Specially designed for glass container industry for repair and/or protection of castings or mould. Chemical composition provides varying fluidity during application and hardness.
230	0.15	4.0	0.8	1.8	-	Bal	3.0	-	P: 2.1	28-32	990°C	Atomised Powder	Fusewelder™ / Spraywelder™ / HVOF** / PTA* / Laser Cladding*	Specially designed for glass container industry for repair and/or protection of castings or mould. Chemical composition provides varying fluidity during application and hardness.
229	-	2.8	0.9	2.7	-	Bal	-	-	P: 2.0	24-30	915°C	Atomised Powder	Fusewelder™ / Spraywelder™ / HVOF** / PTA* / Laser Cladding*	Specially designed for glass container industry for repair and/or protection of castings or mould. Chemical composition provides varying fluidity during application and hardness.
228	-	-	1.0	3.7	-	Bal	-	-	P: 2.0	28-33	930°C	Atomised Powder	Fusewelder™ / Spraywelder™ / HVOF** / PTA* / Laser Cladding*/	Specially designed for glass container industry for repair and/or protection of castings or mould. Chemical composition provides varying fluidity during application and hardness.
227	-	-	0.9	2.7	-	Bal	-	-	P: 2.0	22-27	915°C	Atomised Powder	Fusewelder™ / Spraywelder™ / HVOF** / PTA* / Laser Cladding*	Specially designed for glass container industry for repair and/or protection of castings or mould. Chemical composition provides varying fluidity during application and hardness.
226	-	-	0.8	2.2	-	Bal	-	-	P: 2.0	16-21	935°C	Atomised Powder	Fusewelder™ / Spraywelder™ / HVOF** / PTA* / Laser Cladding*	Specially designed for glass container industry for repair and/or protection of castings or mould. Chemical composition provides varying fluidity during application and hardness.
225	-	-	0.6	2.2	-	Bal	-	-	P: 2.0	13-17	900°C	Atomised Powder	Fusewelder™ / Spraywelder™ / HVOF** / PTA* / Laser Cladding*	Specially designed for glass container industry for repair and/or protection of castings or mould. Chemical composition provides varying fluidity during application and hardness.
25	-	-	1.8	2.5	0.4	Bal	-	-	-	25-31	1,065°C	Atomised Powder	Fusewelder™ / PTA* / Laser Cladding*	Widely used in the glass container industry for repair and/or protection of castings or moulds. Also, used in the oil and gas industry for down hole tooling such as non-magnetic stabilisers, sleeves and steering pads.
27	-	1.0	1.5	2.4	1.0	Bal	-	-	-	16-23	1,045°C	Atomised Powder	Fusewelder™	Widely used in the Glass Container Industry for protection of moulds and for the application of carbide studs for Oil Industry components.

*See WCL TECH-PTA / LASER Selector Chart

**See WCL TECH-HVOF Selector Chart

SURFACING ALLOYS
TECH 1-K SELECTOR CHART



COLMONOY®
(nickel-based)

WALLCOLMONOY
SURFACING ALLOYS

ALLOY	NOMINAL COMPOSITION (%)									ROCKWELL HARDNESS (C-scale)	FUSING TEMPERATURE (Approx.)	SUPPLIED AS	METHOD OF APPLICATION	DESCRIPTION AND GENERAL USES
	C	Cr	B	Si	Fe	Ni	Mo	W	Others					
7431-35	1.4	4.9	1.0	2.1	1.6	Bal	-	33.5	-	35-43 (Matrix)	1,050°C	Composite Powder	Fusewelder™	A blended two-part hard surfacing powder containing 35% tungsten carbide particles in a nickel-based matrix used for protection from severe sliding abrasion. Used on screw conveyors and augers. Finished by grinding.
7431-55	2.4	4.5	0.8	1.5	1.2	Bal	-	52.7	-	35-43 (Matrix)	1,050°C	Composite Powder	Fusewelder™	A blended two-part hard surfacing powder containing 55% tungsten carbide particles in a nickel-based matrix used for protection from severe sliding abrasion. Used on screw conveyors and augers. Finished by grinding.
705	2.4	8.0	1.5	2.3	2.5	Bal	-	47.8	-	55-63 (Matrix)	1,025°C	Composite Powder	Fusewelder™	A blended two-part hard surfacing powder containing 50% tungsten carbide particles in a nickel-based matrix used for protection from severe sliding abrasion. Used on screw conveyors and augers. Finished by grinding.
7621-60	2.7	6.1	1.2	1.8	1.8	Bal	-	57.4	-	55-63 (Matrix)	1,025°C	Composite Powder	Fusewelder™	A blended two-part hard surfacing powder containing 60% tungsten carbide particles in a nickel-based matrix used for protection from severe sliding abrasion. Used on screw conveyors and augers. Finished by grinding.

WALLEX®
(cobalt-based)

42	0.9	18.5	1.7	3.0	2.5	13.5	-	8.0	Co: Bal Cu: 0.8	45-50	1,140°C	Atomised Powder	Spraywelder™ / **HVOF	A cobalt-nickel alloy powder that forms deposits similar to those of Wallex® 50, but softer. Finished with carbide tools and grinding. Developed as a lower temperature alternative for many cobalt-6 applications.
50	0.8	19.0	3.6	2.8	2.5	18.0	-	10.0	Co: Bal	56-61	1,095°C	Atomised Powder	Spraywelder™ / **HVOF	Good corrosion resistance and low coefficient-of-friction provides good metal-to-metal wear protection (not involving much impact). For bushings, knives, and cams. Finished by grinding.

**See WCL TECH-HVOF
Selector Chart

The information provided herein is given as a guideline to follow. It is the responsibility of the end user to establish the process information most suitable for their specific application(s). Wall Colmonoy assumes no responsibility for failure due to misuse or improper application, or for any incidental damages arising out of the use of this material or process.